Learning Extension B – Microclimates: Adapted Activity

A microclimate is a local atmospheric zone where the climate differs from the surrounding area. The term may refer to areas as small as a few square meters (for example a garden bed) or as large as many square kilometers (for example a small town).

Microclimates exist, for example, near bodies of water which may cool the local atmosphere, or in heavily urban areas where brick, concrete, and asphalt absorb the sun's energy, heat up, and re-radiate that heat to the ambient air; the resulting urban heat island is a kind of microclimate.

Another contributing factor to a microclimate is the slope or aspect of an area. South-facing slopes in the Northern Hemisphere and north-facing slopes in the Southern Hemisphere are exposed to more direct sunlight than opposite slopes and are therefore warmer for longer periods of time.

Some cities or large areas are renowned for their microclimates and may have a wide range of extremes of temperature due to the influence of physical factors.

Task 1: Think about your school grounds. Sketch a map of your school grounds below, or use an additional sheet of paper.

Task 2: Think about all the factors that may affect temperature in different areas of your school grounds. For example, you may note that some surface areas are covered in asphalt while others are covered in grass. In the table below, record the factors that you think may affect air temperature readings. Next to each factor identify if you think this factor positively or negatively impacts temperature. If you think the factor increases temperature label it with a "+", if it decreases temperature label it with a "-", if the factor does not impact temperature label it with a "=",or if you are not sure labels it with a "?".

Describe Factor (i.e. grass surface, brick building close)	**Impact on Temperature +, -, =, or ?**

Task 3: Refer back to your school sketch. Select two areas of your school grounds to compare. Circle both areas on your sketch and label the areas. Predict how the air temperature in these locations will compare with one another.

How will the air temperature in each area compare? Why?

Task 4: Following the directions found in the *Current Air Temperature Protocol*, collect air temperature measurements in each selected area. Record any other details that may impact your comparison.

Date of Observation:			
Area	**Record Area Observations (i.e. patchy grass, plant species)**	**Air Temperature**	**Other Important Details**

Task 5: Compare your findings to other students' findings. Describe how your predications compared with observations.

Did your predictions on the microclimate of the two areas you selected match with your observations?

Provide possible explanations.

What other factors could affect air temperature?